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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/851,159
Filing Date: May 09, 2001
Appellant(s): GOERENZ ET AL.

MAILED

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GROUP 1700

Jean-Paul Lavalleye
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/23/04.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 2-10 do not stand or fall together, claims 12-17 do not stand or fall together, and claims 19-20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

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(9) Prior Art of Record

5,999,136	<i>Winter et al.</i>	12-99
4,994,650	<i>Koontz</i>	2-91
5,131,967	<i>Tweadey et al.</i>	7-92
6,555,202	<i>Shukuri et al.</i>	4-03
5,908,675	<i>Marquardt et al.</i>	6-99
DE 2344616	<i>Eisenfuhr et al.</i>	3-75
DE 19632240	<i>Glaser</i>	11-97
5,030,503	<i>Carter et al.</i>	7-91
5,099,105	<i>Goerenz et al.</i>	3-92

Winter et al. is directed to making a laminated glazing for a windshield comprising glass panes 216 and 232 with the pane 216 being provided on its inner surface 214 with a corrosion-protected transparent surface coating 212 and an adhesive layer 234 for coupling the panes together. In one embodiment, the reference discloses but does not depict an arrangement for coating 212 and electroconductive ceramic paint layer 224, which serves as an alternative to the arrangement of these layers as depicted in Figure 4. The process for making the windshield of the alternative embodiment comprises coating the inner surface 214 of pane 216 with the transparent surface coating 212 such that the coating is spaced a distance from all four edges of the pane. The reference then teaches applying electroconductive ceramic paint layer 224 such that it covers a portion of the uncoated region of inner surface 214 and extends across a portion of the coating 212 beyond an edge thereof proximate the peripheral edge of the pane 216. The

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reference then teaches coupling the panes together with the adhesive layer 234 disposed between the panes.

Koontz is directed to making a laminated glazing for a windshield having one pane with a transparent coating thereon with the coating being spaced from the peripheral edges of the pane by masking selected portions of the pane during the coating process, or alternatively, coating the entire surface of the pane and subsequently removing the coating from the selected portions.

Tweadey et al. is directed to making a laminated glazing for a windshield having one pane with a transparent surface coating thereon with the coating being spaced from the peripheral edges of the pane by applying the coating to the entire surface of the pane and subsequently removing portions of the coating in an area extending from the peripheral edge of the pane up to about 0.025-3.18 mm inside the peripheral edge of the pane.

Shukuri et al. is directed to grinding the peripheral edges of a glass pane that is to be used as a vehicle window wherein grinding reduces discontinuities between the vehicle body and the glass thereby reducing air resistance and wind noise.

Marquardt et al. is directed to grinding the peripheral edges of two glass panes that are subsequently bonded by an adhesive layer to form a vehicle window.

Eisenfuhr et al. is directed to mechanically removing portions of a coating located on the surface of a substrate that is subsequently bonded to another substrate to form a windshield.

Glaser is directed to mechanically removing portions of a coating located on the surface of a glass pane by simultaneously abrading the coating and grinding the edge of the pane.

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Carter et al. is directed to making a laminated glazing by coating a glass pane with a transparent coating and applying an electrically conductive ceramic paint over the entire surface of the coated pane.

Goerenz et al. is directed to making a laminated glazing for a vehicle wherein a glass pane is bent after a transparent coating is applied thereto.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5, 7-9 and 18-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al. (US 5999136; of record) in view of Koontz (US 4994650; of record) and Tweadey et al. (US 5131967; of record).

With respect to claim 1, Winter is directed to a process for making a laminated glazing for a windshield (column 1, lines 22-23). The reference teaches the glazing having two glass panes 216 and 232 forming a composite with an inside and an outside, pane 216 being provided on a surface facing the inside of the composite with a corrosion-protected transparent surface coating 212 and at least one adhesive layer 234 for coupling the panes together (Figure 4).

The process for making the windshield comprises coating the inner surface of pane 216 with transparent surface coating 212 (antenna element) such that the coating is spaced a distance from all four edges of the pane (Figure 4; column 4, lines 1-7). The reference teaches applying an electroconductive ceramic paint layer 224 (connector) to the outer surface of pane 232 to

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establish a **capacitive** electrical connection between coating 212 and ceramic layer 224 (Figure 4; column 4, lines 25-37). However, in an **alternative embodiment**, the reference discloses but does not depict arranging the coating 212 and ceramic layer 224 to establish a **direct** electrical connection between the same by covering a portion of the uncoated region of pane 216 with ceramic layer 224 and extending the ceramic layer across a portion of the coating 212 beyond an edge thereof proximate the peripheral edge of the pane (column 5, lines 15-26 – **especially lines 21-26**; column 4, lines 14-20). The reference then teaches coupling the panes together with an adhesive layer 234 disposed between the panes (Figure 4; column 4, lines 35-36).

*It is noted the reference teaches the windshield can be made from two glass panes laminated via an adhesive, as shown in Figure 4, or **alternatively**, the windshield can be made from a single glass pane, as shown in Figure 3. However, **both** the two pane and single pane **configurations** can have their respective transparent coating (antenna element) and ceramic layer (connector) arranged to establish a capacitive electrical connection, or **alternatively**, a direct electrical connection (column 5, lines 15-26). The reference only depicts the two pane windshield when it has a capacitive connection (Figure 4) and the single pane windshield when it has a direct connection (Figure 3).

However, the skilled artisan reading the reference as a whole would have appreciated that when the two pane windshield has a direct connection, as an alternative to the capacitive connection shown in Figure 4, coating 212 and connector 224 would be overlapping, just like coating 112 and connector 124 depicted in the direct connection of Figure 3, but unlike coating 112 and connector 124 being located on the outside surface of the single pane windshield, coating 212 and connector 224 would be located on the inner surface of pane 216 so as to be

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sandwiched between the two panes - last sentence of abstract states antenna element (coating) and connector can be laminated between the panes; column 5, lines 15-26 states **connector 224 may be positioned along surface 214 of pane 216 to establish direct connection between connector 224 and coating 212.**

The reference is silent as to the ceramic layer being a protective layer, the ceramic layer being opaque, the ceramic layer being impermeable to diffusion of water vapor, and removing the transparent coating to create an exposed region between about 0.1-5mm.

It is noted the present specification teaches the protective layer being an electroconductive ceramic paint (p. 3, lines 5-7 and 24-25). Therefore, the skilled artisan would have readily appreciated that the electroconductive ceramic paint layer of Winter would also serve as protective layer that is impermeable to the diffusion of water vapor.

As for the protective layer of Winter being opaque, the reference teaches the protective layer being capable of impairing the visibility of the driver if it is covers too much area (column 4, lines 57-62). Therefore, the skilled artisan would have readily appreciated that the protective layer is opaque.

It is known in the art to form a laminated glazing for a windshield having one pane with a transparent coating thereon and which is spaced from the peripheral edges of the pane by coating the entire surface of the pane and subsequently removing the coating from selected areas of the pane, as taught by Koontz (column 4, lines 18-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the transparent coating of Winter to the entire surface of the pane and subsequently remove the coating from selected areas

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thereof because such is known in the art, as taught by Koontz, and this would eliminate the time and money needed for precise coating of the selected areas.

Selection of a particular width for the uncoated regions of the pane would have been within purview of the skilled artisan at the time the invention was made. However, it is known in the windshield art to apply a transparent coating to the entire surface of a glass pane and subsequently remove portions of the coating in an area extending from the peripheral edge of the pane up to about 0.025-3.18 mm inside the edge of the pane, as taught by Tweadey (column 4, line 61 – column 5, line 5; column 5, lines 11-12).

As for the portion of the claimed range greater than 3.18 and less than 5mm, the skilled artisan would have been motivated to perform the removal step within this portion as well since it is so similar to that taught by Tweadey, only the expected results would have been achieved.

Regarding claims 5, Winter teaches the protective layer being a bakable ceramic paint; note paint can be thermosetting, which would require heating (column 3, lines 6-7).

Regarding claim 7, Winter teaches the protective layer being in the form of a frame (Figures 2-3).

Regarding claim 8, the reference does not expressly state that the protective layer serves a decorative purpose. However, this layer is visible to the human eye (as established above) and therefore could be considered decorative by some since beauty is in the eye of the beholder.

Regarding claim 9, Winter teaches baking the ceramic paint and both panes being glass (column 3, lines 24-26; column 6, lines 22-26).

With respect to claim 18, all the limitations were addressed above with respect to claim 1.

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Regarding claim 19, Winter teaches laminating the glass panes together but is silent as to heat and pressure. It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the glass panes of Winter using heat and pressure because it is known in the art to use heat and pressure to bond glass panes having an adhesive layer between them, as taught by Tweadey (column 6, line 67 – column 7, line 2), where this achieves good interfacial contact and adhesion.

Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al. in view of Tweadey et al.

With respect to claim 11, all the limitations were addressed above with respect to claim 1.

Regarding claim 12, selection of a particular angle would have been within purview of the skilled artisan at the time the invention was made.

Regarding claim 13, Winter teaches the protective layer being a bakable ceramic paint (column 3, lines 24-26).

Regarding claim 14, Winter teaches the ceramic paint being electrically conductive (column 4, lines 30-31).

Regarding claims 15-16, Winter teaches the transparent coating may be multilayered and one of the layers being silver (column 4, lines 7-8; column 5, lines 35-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include antireflection dielectric layers adjacent to the silver layer in the multilayered transparent coating of Winter because such is known in the art, as taught by Tweadey (column 4, lines 21-23 and 30-34), and these layers work in conjunction with the silver layer.

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Regarding claim 17, Winter teaches the adhesive layer being thermoplastic PVB (column 4, lines 35-36).

Claims 21-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al. in view of the collective teachings of Shukuri et al. (US 6555202; of record) and Marquardt et al. (US 5908675; of record).

With respect to claim 21, all the limitations were addressed above with respect to claim 1; note Winter teaches transparent coating 112 between protective layer 124 and one of the glass panes, protective layer 124 between adhesive layer 234 and transparent coating 112, and transparent coating 112, protective layer 124, and adhesive layer 234 between the glass panes (Figures 3-4; abstract). However, Winter is silent as to the glass panes having a ground peripheral edge.

It is known in the art to grind the peripheral edges of a glass pane that is to be used as a vehicle window, as taught by Shukuri, wherein this treatment reduces discontinuities between the vehicle body and the glass thereby reducing air resistance and wind noise (Figure 6; column 1, lines 14-16; column 2, line 66; column 4, lines 49 and 55-56).

It is also known in the art to grind the peripheral edges of two glass panes that are subsequently bonded by an adhesive layer to form a vehicle window, as taught by Marquardt (Figure 1; column 1, lines 14-15; column 6, lines 56-57).

Therefore, it would have been obvious to the skilled artisan at the time the invention was made use glass panes having ground peripheral edges for the windshield of Winter because such is known in the art, as taught by the collective teachings of Shukuri and Marquardt, wherein this

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treatment reduces discontinuities between the vehicle body and the glass thereby reducing air resistance and wind noise.

With respect to claim 22, all the limitations were addressed above with respect to claims 1, 18, and 21.

Claims 2-3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al., Koontz, and Tweadey et al. as applied to claim 1 above, and further in view of Eisenfuhr et al. (DE 2344616; of record) and Glaser (DE 19632240; of record).

Regarding claims 2-3, Winter in view of Koontz is silent as to how the coating is removed. Selection of a particular removal method would have been within purview of the skilled artisan absent any unexpected results. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use mechanical methods because it is known in the windshield art to remove a coating from a glass pane using mechanical methods, as taught by Eisenfuhr (abstract). Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the coating by simultaneously abrading the coating and grinding the edge of the pane because it is known to mechanically remove portions of a coating located on the surface of a glass pane by simultaneously abrading the coating while grinding the edge of the pane, as taught by Glaser (abstract).

Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al., Koontz, and Tweadey et al. as applied to claim 5 above, and further in view of Carter et al. (US 5030503; of record).

Regarding claim 6, Winter is silent as to the protective layer covering substantially the entire main surface of the coated pane. It would have been obvious to cover substantially the

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entire main surface of the coated pane with the protective layer of Winter because it is known in the art to form a laminated glazing by coating a glass pane with a transparent coating 16 and applying an electrically conductive ceramic paint 18 over the entire surface of the coated pane, as taught by Carter (Figure 3; column 3, lines 22 and 51-53; column 4, lines 40-47), where this serves to protect the entire transparent coating.

Claims 10 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al., Koontz, and Tweadey et al. as applied to claim 1 above, and further in view of Goerenz et al. (US 5099105; of record).

Regarding claims 10 and 20, Winter is silent as to bending the glass after coating. It would have been obvious to one of ordinary skill in the art at the time the invention was made to bend the glass pane of Winter after applying the transparent coating because such is known in the laminated glazing art, as taught by Goerenz (column 4, lines 21-30), where this allows the glass to be shaped for its intended purpose (i.e. windshield).

(11) Response to Argument

Appellant argues on p. 4-5 and 1st paragraph on p. 7 that Winter is not relevant to the objective and the process of the present invention as claimed because Winter is concerned with a method of providing a glazing with an antenna, and in no way describes or suggests a method of so shaping and fabricating the edge region of two glass plies that are to be bonded together so as to provide a protective seal around the periphery of the glazing that is produced. Appellant also argues that the present invention has nothing to do with an antenna system on a glazing but has everything to do with a modification of the edge structure of two bonded glass panels such that the modification is to prevent corrosion of the structure by being impervious to water vapor.

First, Applicants “protective seal” results from providing a protective layer 6 that overlaps a surface coating 5 located on a first glass pane and extends between coated and uncoated regions of the pane near the peripheral edge thereof, covering the coating and protective layer with an adhesive layer, and bonding a second glass pane to the adhesive layer (see Figure 1). The “protective seal” results from the protective layer being an electroconductive ceramic paint where the present invention fails to disclose and/or claim specific ceramic paints (p. 3, lines 5-7 and 24-25).

Although Winter does not expressly set forth a concern with providing a protective seal for the glazing, the reference does teach providing an electroconductive ceramic paint 224 that overlaps a surface coating 212 located on pane 216 and extends between coated and uncoated regions of the pane near its peripheral edge, covering the coating and protective layer with an adhesive layer 234, and bonding a second glass pane 232 to the adhesive layer (Figure 4; column 5, lines 8-26; last sentence in abstract). Although Winter does not expressly state that the electroconductive ceramic paint protects the glazing by being impermeable to diffusion of water vapor, the skilled artisan would have appreciated that such protection is simply due to the nature of the electroconductive ceramic paint; therefore, since Winter also teaches an electroconductive ceramic paint the skilled artisan would have appreciated that it too would be impermeable to diffusion of water vapor and therefore protect the glazing from such – even if this protection is not an expressly stated concern of Winter.

Appellant argues on p. 5-6 and 2nd paragraph on p. 7-1st paragraph on p. 8 that Winters teaches the two-pane laminated glazing embodiment having a capacitive electrical connection as shown in Figure 4 where coating 212 is separated from connector 224 by pane 232. Appellant

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argues that Winters teaches the single-pane laminated glazing embodiment having a direct electrical connection as shown in Figure 3 where connector 124 overlaps coating 112 on the outside surface of pane 116. Appellant therefore argues that when the two-pane laminated glazing has the alternative direct electrical connection, pane 232 of Figure 4 would then be equated to pane 116 of Figure 3 such that coating 212 and connector 224 would be located on the outside surface of pane 232 in an overlapping arrangement. Appellant further argues that because the electrically conductive component (connector 224) of Winters would be on the outside surface of the pane the reference in no way teaches or suggests the present invention where the electrically conductive layer 6 is located between the laminated panes.

The examiner once again points out that Applicant has misinterpreted the two-pane and single-pane embodiments depicted in Figures 4 and 3, respectively, and this is probably a result of the reference choosing to depict only one type of electrical connection for each embodiment (capacitive for two-pane, direct for single-pane) instead of depicting both types of electrical connections for each embodiment.

However, the skilled artisan reading the reference as a whole would have readily appreciated that when the two-pane windshield has a direct connection, coating 212 and connector 224 would be overlapping, just like coating 112 and connector 124 depicted in the direct connection of Figure 3, but unlike coating 112 and connector 124 being located on the outside surface of the single pane windshield, coating 212 and connector 224 would be located on the inner surface of pane 216 so as to be sandwiched between the two panes - last sentence of abstract states antenna element (coating) and connector can be laminated between the panes;

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column 5, lines 15-26 states **connector 224 may be positioned along surface 214 of pane 216 to establish direct connection between connector 224 and coating 212.**

Appellant argues on p. 9-10 that Koontz does not teach or suggest the claimed product and method steps and because Koontz and Winters are directed to completely different areas of glazing production, it is not understood how the two patents can be reasonably combined.

The examiner points out that Koontz was only used to show it being known in the windshield art to form a laminated glazing having one pane with a transparent coating thereon with the coating being spaced from the peripheral edges of the pane by coating the entire surface of the pane and subsequently removing the coating from selected areas of the pane.

Appellant argues on p. 10-11 that Tweadey does not suggest the present invention as claimed and therefore the combination of Winters, Koontz, and Tweadey does not suggest the method of the invention as claimed in claims 1 and 18.

The examiner points out that Tweadey was only used to show it being known in the windshield art to apply a transparent coating to the entire surface of a glass pane and subsequently remove portions of the coating in an area extending from the peripheral edge of the pane up to about 0.025-3.18 mm inside the edge of the pane.

Appellant argues on p. 12 with respect to claims 2-3 that Eisenfuhr only shows the lamination of glass panes by intervening plastic adhesive layers which also achieves the lamination of internally electrically conductive layers therein.

The examiner points out that Eisenfuhr was only used to show it being known in the windshield art to remove a coating from a glass pane using mechanical methods.

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Appellant argues on p. 12 that Glaser does not teach or suggest a method of grinding the edges of glass sheets or panes.

The examiner points out that Glaser was only used to show it being known in the art to simultaneously remove a coating from a glass sheet while simultaneously grinding the same.

Appellant argues that neither Eisenfuhr nor Glaser teach rounding or bevelling the edge portions.

The examiner points out that this argument is not commensurate with the scope of the claimed invention.

Appellant argues on p. 12 with respect to claims 5 and 13-14 that Winters teaches an electroconductive ceramic paint to form the connectors but clearly there is no teaching or suggestion of a protective layer formed from a bakable ceramic paint about the periphery of a glass pane in the context that it is positioned between an adhesive layer and a transparent surface that is laminated under the protective coating.

The examiner directs Appellant to the first six paragraphs in the "Response to Argument" section, which fully address Applicants' arguments found on p. 4-5 and p. 5-6, which mirror the arguments set forth on p. 12.

Appellant argues on p. 13 with respect to claim 6 that Carter is irrelevant to the features of the present invention so that the combined patent disclosures do not suggest the invention aspect of claim 6.

The examiner points out that Carter was only used to show it being known in the art to form a laminated glazing by coating a glass pane with a transparent coating 16 and applying an electrically conductive ceramic paint 18 over the entire surface of the coated pane.

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Appellant argues on p. 13 with respect to claim 7 that Winters does not teach or suggest the ceramic paint layer being in the form of a frame.

The examiner points out that Winter does teach the ceramic paint being in the form of a frame (Figure 2).

Appellant argues on p. 14 with respect to claims 11-17 that Winters and Tweadey fail to teach the claimed invention as set forth in claim 11.

The examiner directs Appellant to the first six paragraphs in the "Response to Argument" section, which fully address Applicants' arguments found on p. 4-5 and p. 5-6, which mirror the arguments set forth on p. 14.

Appellant argues on p. 14 that there is no teaching or suggestion of disposing a protective layer at an angle of about 180-190° over a transition region of an underlying transparent coating.

The examiner maintains the position that selection of a particular angle would have been within purview of the skilled artisan at the time the invention was made; it being noted that the present specification places no criticality on the angle.

Appellant argues on p. 15 with respect to claims 10 and 20 that Goerenz shows the bending of decorative assembled glass laminates that are used as automobile windows that contain a heating element, but there is no teaching of bending glass panels that are configured as laminates in the manner of the present invention.

The examiner points out that Goerenz was only used to show it being known in the laminated glazing art to bend a glass pane after applying a coating thereto.


Appellant argues on p. 16 with respect to claims 21-22 that Shukuri and Marquardt do not improve on the deficiencies of Winters.

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The examiner points out that Shukuri was only used to show it being known to grind the peripheral edges of a glass pane that is to be used as a vehicle window, wherein this treatment reduces discontinuities between the vehicle body and the glass thereby reducing air resistance and wind noise. The examiner also points out that Marquardt was only used to show it being known in the art to grind the peripheral edges of two glass panes that are subsequently bonded by an adhesive layer to form a vehicle window.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jessica L. Rossi 
Patent Examiner
Art Unit 1733

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Conferees

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